## Pocket Notebook, PN-84-02-25

This pocket notebook covers the period February-March 1884. All of the entries are by Edison. Many of the notes and drawings relate to the carbonization of lamp filaments and the production of nitro-cellulose filaments. There is also material pertaining to multiple telegraphs, telephones, batteries, and artificial mica. The cover of the book is missing, and the pages are unnumbered. Approximately 50 pages have been used. Several pages have been torn out of the book.

"West Orange — Lat — Notes" D 1884 (1884)

Geo S Yingling
Box 86 Jeffersonville Ohio

writes relates great
want of a branding
iron that will not hurt
cattle - etc - nitrate silver
states that only very simple
brand used as letters run together
of complicated brand several
irons used great pain to
animal —

Tues March 5 1884

try Gelatine mixed with
Phosphate Lime, also
phosphate ammonia
& other Alkaline phosphates
in different proportion
with view prevent melting
& Swelling in Carbonate
also Chloride Ammonia
which will volatilize
before red, also with
Sodine & other Salts
Volatile things try
Aniline Salt in $H_2O$
mixed with Gelatine,
this aniline going off
below red -
also try various agents
try Sulphur Crystals
with Ether

Nothing to throw over the top
Unusual — reflectional & blunt
Lo Ulva Cafe Frank Goelle Kirk

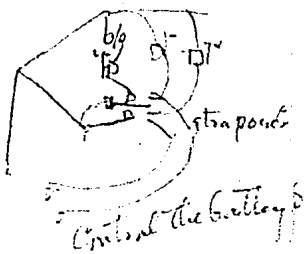


Feb 27 1964

Nothing of Left exit Cafe

Write Halzer to
Make some filament
of Bamboo with the
outer Silica surface
left in

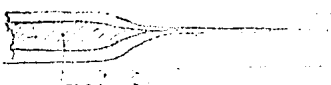
Octdiaphr




Send constant vibration to
keep reed going both ends.
have spg on each side
Cutting in relays - also
Combatting putting on extra
battery.

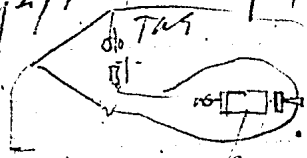
F/Rby 28 7.884
TAE

India ink. Feby 25 1884
Silkened Cotton. TAS



Gelatin impermeable, & draw hot spin wheel.
Deposit between platy Co/o get Au + Ag in mind — mountain block in at conductivity —

Feby 27 1884 Sextuplex.




Different mak. Resonator + telephone
bk det for mat

It strikes me after much analysis that the future scheme for direct conversion is the placing of finely divided metal on one plate & a per oxide on the other by rapid mechanical means the placing of these plates in situ & the reducing of the perox & the oxidizing of the metal giving the electricity - afterwards raising the lower oxide to a per by chemical means & the reduction of the monoxide to metal by gaseous reduction with heat & lot of machinery for Easy.

handling + preparation of plates + rapid reduction + peroxidation so one man can handle apparatus for a 1000 hit station,

Experiment.

press freshly prepared peroxide lead on roughened lead plate with holes through it. use heavy pressure + face it with hair cloth - other plate press gently on roughened + holy plate. Lithange reduce by gas + char press gently. also by ~~lead plate~~ in porous cup packed with lead reduced by Zinc.

also Make finely divided lead by Electrolysis in KOH sol from another lead plate = also by blowing air + also by stirring.

also by holy plate with red oxide lead in holes for reducing the H,

In both they both the adhesion of lead

should preferably be
inoxidizable,
give this placing on sheet
the material to give the E
a good long & exhaustive
trial before giving it up
Ascertain the theoretical
amount of lead to Mono
& peroxide mon in
weight per horsepower per
hour
Try all other Sals
than Sul acid,
Try the fine head in
Mercury as amalgam
and the red Mercury on
amalgamated plate,

Try mon salts as the
cheapest,

Carbon plate &
Lead plate with
finely divided
Lead — the Lead raised
to Mono afterwards
reduced by gas —
the H lost & dont get
well current but
by heat & gas agitation
prevented from polar
perhaps the Carbon
may have peroximangan
in it & air absorbed

Exhaustion
platinized surfaces
Carbon, ~~Cocoanut~~
perhaps red mercury
on Carbon

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try common print
cloth, dipped in
Solution of linseed
oil in which is mixed
iodide Cadmium crystals
fine, then dry by
Centrifugal to give
a silk surface

10 lbs, 3000 lbs,

10 00#

Soak flax + manilla in water day or so blot & then freeze to bust it all into filaments.

Look into Experimental research book to see what essential oil it was that developed paper

See if Silk can be dissolved and if it will combine with glue, rubber, resin etc,

Mch 20 1884

Try dry salts of Cupric ammonia & Cellulose with heat to dissolve for substitute for Celluloid.

Mch 20 1884

See if there is not a Valuable Compound of Calcium Magnesium etc whereby a deposit of Oxide can be put on filament by Electrical Incandescence

See if pumice stone rubbed on filament will make smoother surface on filament.
Mix with the ~~fam~~ size or stiff to polish with 50. or more per cent of Magnesia oxide which is not reduced by carbon, grinding the latter up fine with the size - apply as in french polish -

See if Bladder intestine etc horn can be tanned or effected by Tannic acid —

Ascertain by Experiment everything that will precipitate glue from its water solution.

also if glue is soluble in any other liquid than water.

As Gaga cauth is a Compound of Lime see if more lime cannot be mixed with it -

Try the Cellulose Experiment with Conc. solutions of all kinds of Compounds ~~or~~ ~~[illegible]~~

also put Nitrate Potash in it pour & stir rapidly & then put Sulac'd

~~Rub~~ Rub glass with it & Expose to fumes of Nitric acid rub again & so on &c if cant get layer

Make mixtures of Rubber with various things such as linseed, also rubber with Resins to get a flexible Sheet also Celluloid,

See Coles about furnishing Arc Lamp stabs to try Experiment with,

Study up running Carpetings over into rough matte,

French polish filament with various things to get shining surface of Carbon

Such as Dammar
= Cotinot paper be made of
it. by Cutting in seemingly
narrow strips, then felting.

Try experiment of using Linseed oil mixed
with finely divided Electrotypers plumbago
between Carbon plates agitating the Liquid
so as not to allow actual Contact &
Keep adding plumbago as long as it
comes down in resistance. Another
way is perhaps better is to use finely
divided metal as an acid will
take that out of the Linseed easy —

Try the Effect on Linseed & Cotton
seed oil of Various oxidizing
agents with & without heat,
thus Nitrate Potash Hot Sulphuric
acid — permanganate of Potash
Vanadate Ammonia,
Chromic acid — per oxide of metals
other than Lead,
Ferrid cyanide Potash, pass chlorine
gas through it with acetate Lead in
Linseed —

Boil some Linseed in a Vacuum
tube to Expel the Volatile Constituent,

Mix Linseed oil with Every Kind
of Solvent to see if some Volatile
Constituent will not come out.
also agitate it with Various
powders to see if the pores will
not take up the Volatile Constituent

preferable way would be to bleach Epidermis off the wheat or grain.

Utilization of Bran combined with Cementing Material + Hydraulic pressure to make Base Material for all uses,

Act on bran with $SO_4$ - $ClZn$ + also $HFl$ - also other Conc liquids, find its Solvent, also analysis to see if Epidermis is abnormally Constituted,
Mix with thin glue water then put in Centrifugal + throw most of it off then press + dry - try Rubber also Tragacanth also, Resins.

gathering Butter,
Little Falls man

Artificial Tortoise,

Utilization of Bran
as base material.
Cheap 1/2 c lb. —

Grind the oxide Lime or
Magnesia with the gelatin,
in paint mill for filaments,

Making Sheets bone by
Rubbing layer gelatin
then flow Bichromate K
~~dro~~ stay 2 weeks —
Sun it & dry then oven it
again gelatin & so on —

Mix glue + Nitro cellulose together
also glue + Cellulose dissolved
in Cupric ammonium.

See if there aren't substitution
Compounds of Cellulose that
is soluble in 100 Gallon
Solutions,

Way Duplex,

Gold Separating Mac
by Copper chloride principle

Mix Glue + organic Carbon
Compounds larger proportion
of later - Carbonyz -

Filed: 1884 D. Menel Pat. Lab - Notes (A)
P11-811-02-28

~~J. S. Cap~~

J. Stevens
Nenah Wis -

Change Color Brand to
pure white for grinding
into flour -

1/2 cent allowable.

in addition to 1/2 ct
there would be 2c profit

Bran worth 1/2 cent pound.
germ goes into bran, but
can be separated,

get large sound potatoes slice them thin dry under gentle pressure to make Carbons from —

also Turnips, pumpkin Squash. Egg plant, (by Epidermis of Egg plant) apple. Turnip, Beet,

Carbons - Collodion film in Lubricated —

Mix Castor oil or Lac with Sol of Collodion also other things filmings of Carbons

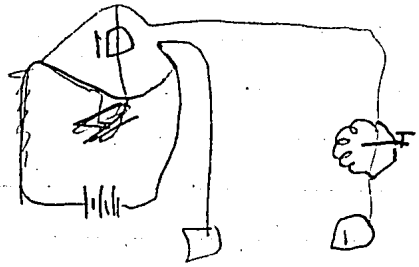
Licorice seems to carbonize without any swelling large amount gas goes off - might be used as binder or mixed with other things rolled into sheets to cut filaments from

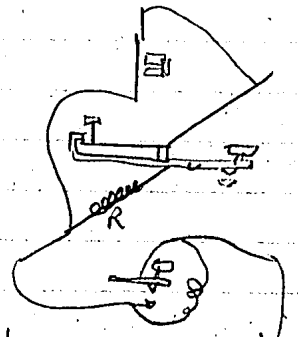
March 21 1889

paint filament with Camel hair brush with acetate of Mag also Lime, Mag 1st = then get Vac & gently bring up then b/k Vac & paint again etc several times - then get tape + Phenomenon

See if a agate or other stone grinding Mill can be obtained perhaps a Bogardus paint grinding Mill will do to grind the Oxides with the Carbonic Component —

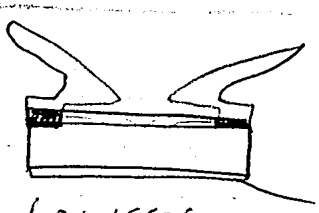
Σ



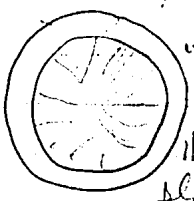



Artificial Mica

Ground Sifting plug material
layer like French pale of the
oil then layer — etc



Mch 21 1862



insulating ring on chalk
dia over it
thousands of in
flat $\frac{1}{1000}$ cu in
resting on chalk
dia air tight,
The $H_2O$ knocking up & down
pores produce Vac &
work Dia, E

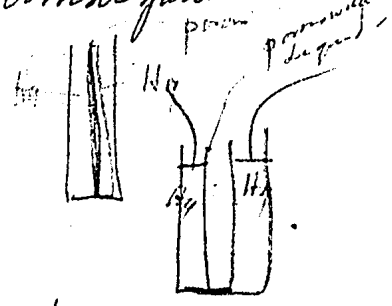
March 21 / 8 84

Forced Carbon Battery =
Use hot conc sol of Caustic Potash to absorb the CO monoxide to formic acid — finely divide the C in porous Cup — use some other liquid outside Keep temp high

Bran has a Silica Surface = Hot soda take it off = then by soaking & boiling bleach — possible by displacement Can wash — try Eliolaty for bleaching Bst rollers —

Float linseed oil on Nitric acid Mix & immerse with Sulphuric strong to Keep it Concentrated

Secondary battery with Mercury electrode & such solutions as to make a Hydrogen amalgam —




Hunt then will do the exp. March 21/84

Conc sol ClH
Magnesia rolled
with glue,
Carbonyls —

Melt glue or gelatine ~~[illegible]~~ mixed with the oxide Magnesia or Compound thereof in the smallest quantity of water possible & force this out into sheets through a die, blower or otherwise. Cooling to set it quick when it comes out.

by this means a menstruum greatly weaker can be used -

Try dissolving glue in Dilute phosphoric anhydride,

Insert there a Sulphate of Lime or Magnesia,

Talcate Magnesia will perhaps Carbonize if mixed with ~~little~~ glue

I wonder if starch
is ground so as to
break all the starch
granules if it is
moistened & dried
in sheets for wldt
work —

Try this grinding
with glue —

perhaps Gutta
percha mixed with
lime Magnesia etc
works —

Try Gum Zanzibar
& Magnesia melted
in linseed oil &
made in sheets a la French
polish

I wonder if iodide of nitrogen precip mixed with glue, would not coalesce -

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try asphalt + Magnesia also Compounds of Lime + Magnesia soluble in menstrum ~~[illegible]~~ in which asphalt is soluble in -

also tragacanth as a base.

try Vanadium as an oxidizer for Linseed and Cottonseed oil

Iodide of the high
Melting Oxide might
be used in place of
Chlorides as the
iodide would
much Easier,

Use Cerium & the
rarer oxides in the
Experiment, also
Phosphate other
than Lime,

Perhaps in the Silk Experiment an Elastic precipitate from Something might be formed on a platinum point immersed in the liquid & wound up on a platinum Cylinder within the liquid,

Can a bladder be Tanned, if so it would work owing to Oxygenation.

Make a 100
Sticks 1/2 dia
of charcoal at
Lamp factory
have them burned
from White wood
& other woods for
Experiment in direct
Conversion —
Make them 8
inches long —

Manganate Soda
for taking Carbon
& air revers —

Mix bran with glue having minimum water make into sheets,

---

Mix Sulphur with glue bath as flows & in compound form also with other bases, think in Carbon the S will combine with the H & thus not attack the Carbon

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Mix with Collodion
an animal matter
like glue which
will reduce the
O of the Nitro Cellulose
in Carbonation.
dont think glue is
valuable. but some
Carbonable Material
may be think Linseed
oil is that would
reduce —
Borglucin.
Sulphuric acid
see if it dont harden
it by taking $H_2O$
away

Cant something be put in Collodion that will be decomposed by light such as the Urn Solutions hence after sheet is made exposure to light decomps the Nitro-C to plain Cellulose

Mix coal tar also Charcoal also crude Petroleum with Lithunge & also Red Lead in Crucible with Coors & Silica reducers globule agst proportion & bake over

perhaps may have
to mix a flux with
it such as Salt
Borax etc —

mix magnesia oxide - also Carb. with fine Telephone lamp black and gelatine as much as it will stand of the magnesia - also try Tar Magnesia & lamp black - also try Lime, Oxide Aluminum + other oxides;

Mix. gelatine or rather glue with water + the oxides, also with chlorides of the infusible earths.

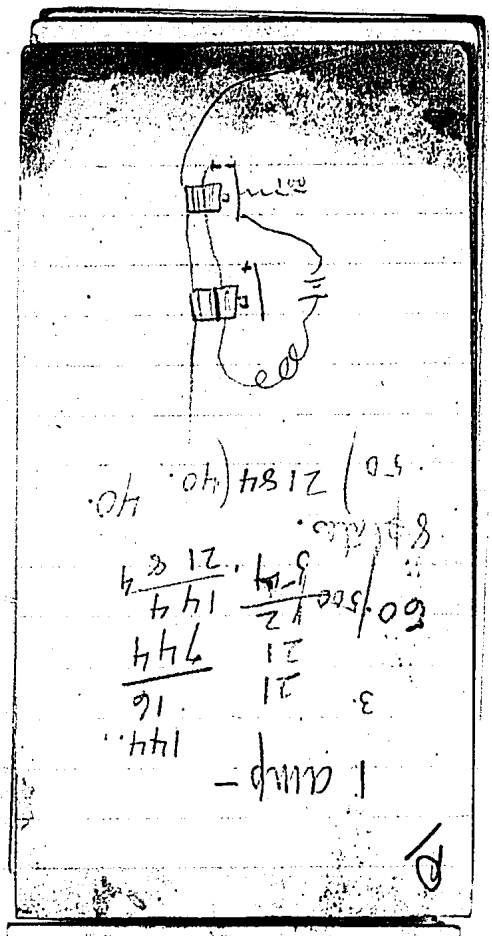
Try tragacanth and the oxides, the idea being to use as much of the oxide as is possible with the carbonizable organic material

If it is possible mix tar with the oxides only

I have a theory that the oxide will not be reduced and that the organic material will be carbonized as a lace work the oxide staying there hence when carrying commercially or more will be white oxide; hence the carbon will last twice as long and the globe will be no blacker besides I will have a high resistance carbon;

also try boiled linseed & the oxides rolled out thin in sheets - a lac putty.

Sheet gelatine treated with Bichromate of Potash
Magnesium aluminum



am told that on
west side Colorado
River. Near mouth
sort of a Delta. near
fort Yuma, where it
pours into Gulf.
Man named Tom
Denton Letter reach
him Care ——
a Rush probably
Urania Merville says
Marvellous fine fibre. Party in
here offs owns it wants to get
up Co to work its fibre.
Rush grows 10 @ 15 ft
high — get some

$\frac{1}{10}$ Hz $\frac{1}{1600}$

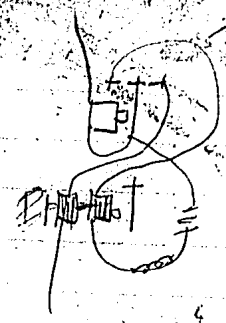
Item 34600 21.7
3 230
2000
5230

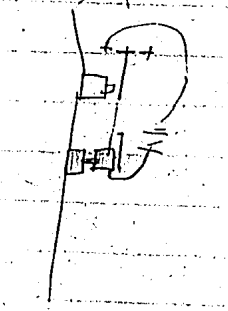
750 Watt

| | |
|---|---|
| 75 — | 1800 |
| Pump | 150 |
| Eng — | 14050 |
| Installation | 250 |
| Bolts — | 30 |
| Belt, Bolts | 180 |
| Dynamo | 3000 |
| Selling labor — | 300 |
| Ingestor | 75 |
| Extra work | 450 |
| Piping | 300 |
| Salvaltp | 50 |

3630
3450
100

D





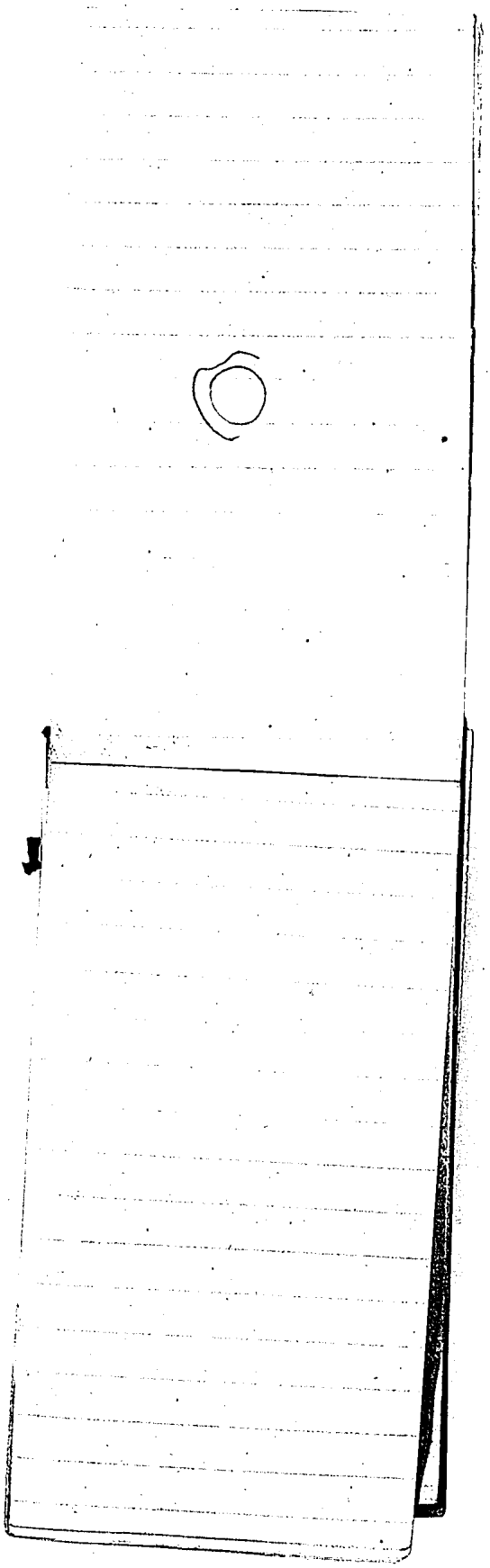
| | | |
|---|---|---|
| 450. | | |
| 375 | | |
| 20, | | |
| 150 | | |
| 100 | | |
| 50 | | |
| 25 | 3 | 30. |
| 50 | | 50 |
| | 30 | 10 |
| | | 20 |
| 1220. | | 110. |

96 fare
36 – Pullman
16 Eating
246 Magnolia
4 fare Mag
4 Augustine
6 Palatka
67 Palatka Hat
67 Sanford
10.50 Tampa
13 Shells
16 Waiter
16 going boat
20 Coming boat
20 Josie
40 Maine
~~20~~ Baths
8 Extra
684

7

688
600
40
1328

1500
1328
172
12
160
25
135



400 cells.

25 sqr inches. 3 inches apart
3 ohms. $\frac{1}{4}$ inch apart. .25 ohm
hence 4 sqr feet. 2304 sqr inches
$\frac{1}{400}$ of ohm.

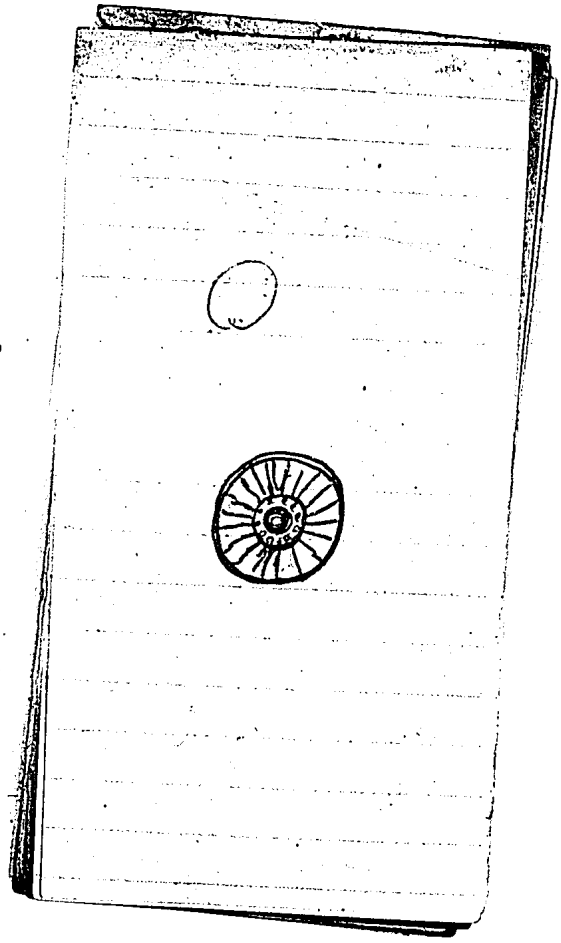
20 — 100
80 — 200
320 — 300
1280 — 400
5120. — 500

48
48
384
192
2304

~~100~~
92
46

25 — 1
01250 — 2
006 — 4
03 — 8

25 | 2304 (92
225
54
50

.25
1 ohm will be
$\frac{1}{100}$.
$\frac{1}{400}$ ohm

100 hp current with 20 tons require 81 longs to double the deposit.